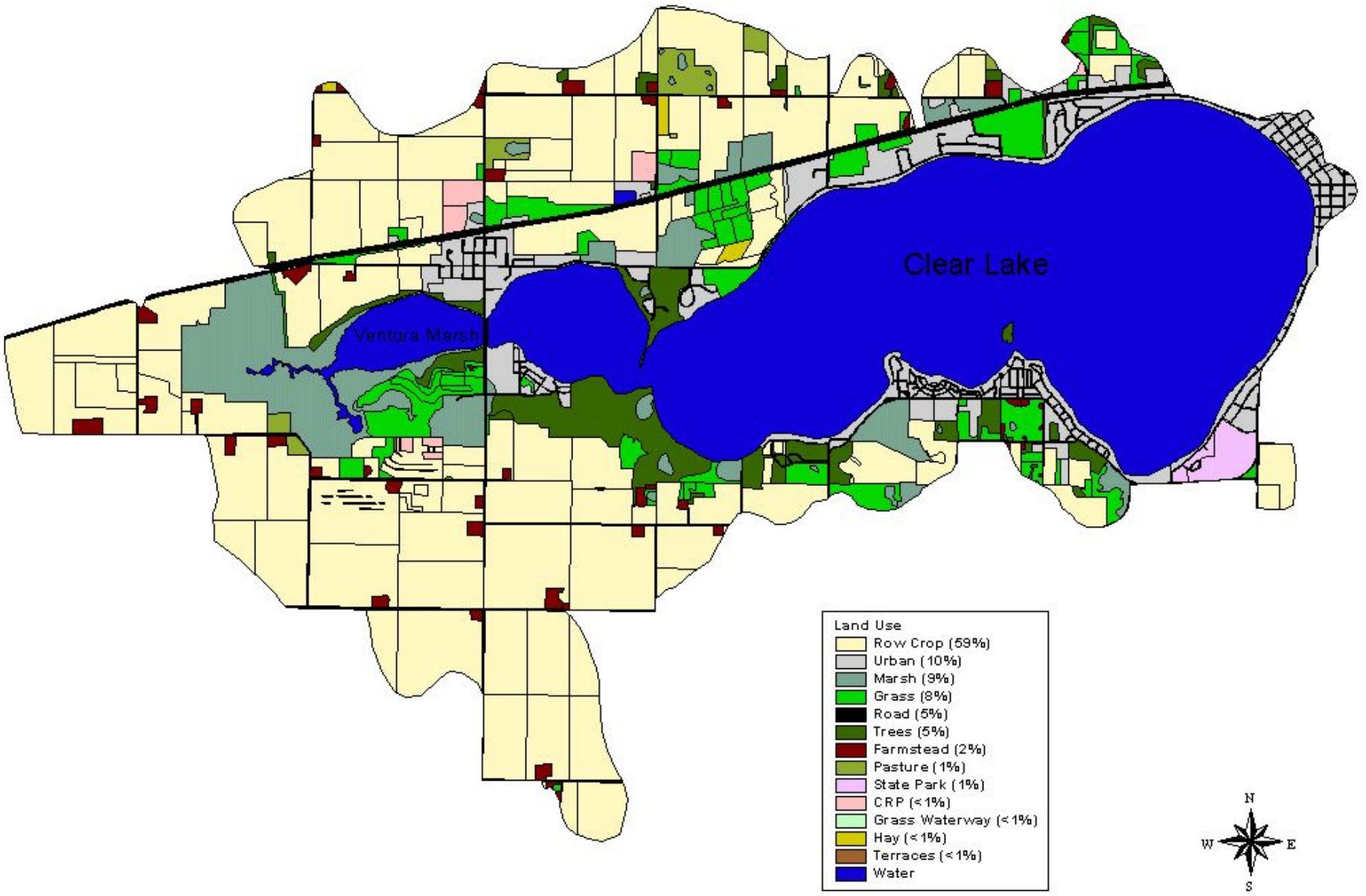
Clear Lake Water Quality Project

ISU/DNR: Three Major Water Quality Issues

- Phosphorus concentrations are very high, which causes algae growth, which decreases water clarity
- Sediments entering Clear Lake reduce water clarity, decrease lake depth
- Localized bacteria inputs must remain low so safe recreation can continue to occur

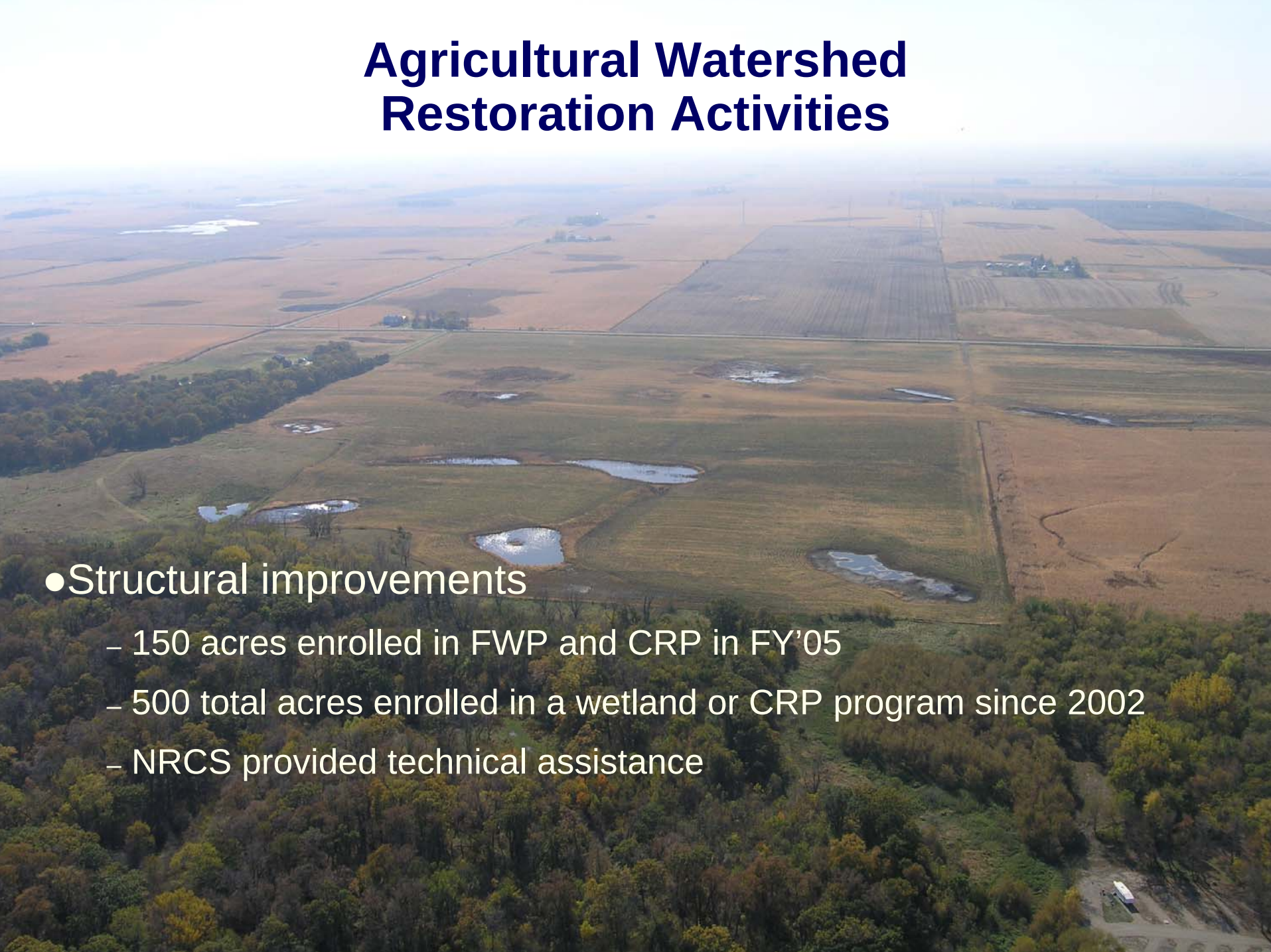
Clear Lake Watershed Land Use



Agricultural Watershed Restoration Activities

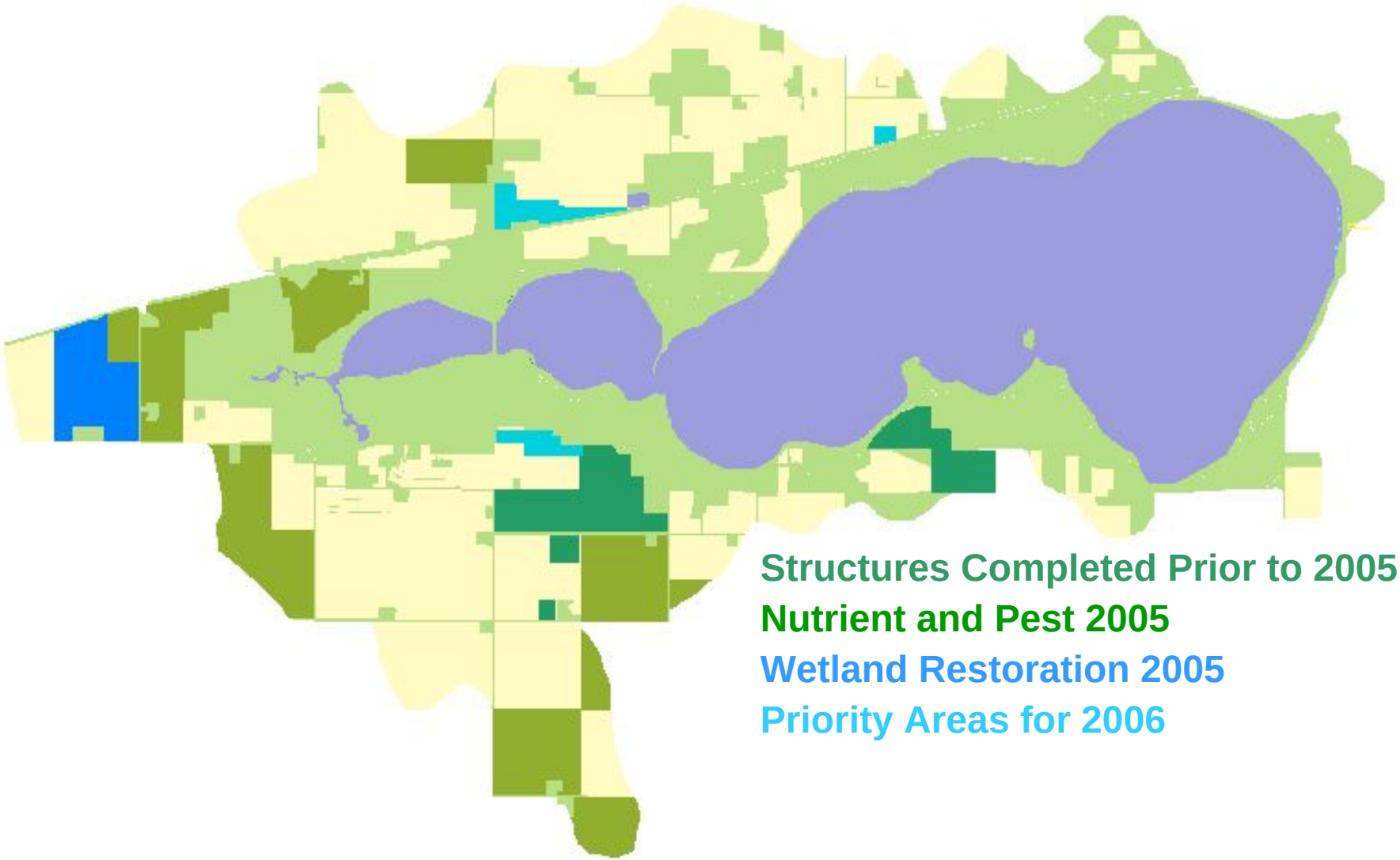
- Nutrient and Pest Management Program
  - Crop consulting, soil sampling, conservation tillage incentives
  - 1400 acres enrolled in 2005

Agricultural Watershed Restoration Activities



- Structural improvements
  - 150 acres enrolled in FWP and CRP in FY'05
  - 500 total acres enrolled in a wetland or CRP program since 2002
  - NRCS provided technical assistance

Clear Lake Agricultural Improvements



Urban Watershed Restoration Activities

- Storm Water Filtration System Installation
  - 11 systems installed to date at avg. cost of $50,000 ea.
  - 4 more scheduled to be installed in FY'06
  - 10 more improvement sites investigated in FY'06.
  - Funding: City of Clear Lake, EPA 319, Hanson Foundation, Cerro Gordo County, IDNR


– 97% bacteria removal
– 67% phosphorus removal
– 50% sediment removal

Stormwater Improvements

Stormwater installation before 2005

Stormwater installation 2005

Stormwater investigations 2005

Storm Water installations 2006

Bottom Line

Phosphorus:

- Total estimated phosphorus reduction to date:
  - 3,105 lbs/yr
- Percent reduction in phosphorus loading from watershed to date:
  - 38% reduction

Soil Loss:

- Total estimated soil loss reduction in 2005:
  - 804 tons
- Total estimated soil loss reduction to date:
  - 2,389 tons/yr

Future Restoration Activities

- Ventura Marsh
  - Corps of Engineers Section 206 Project
- Clear Lake
  - State and Locally Led Project

Ventura Marsh Restoration

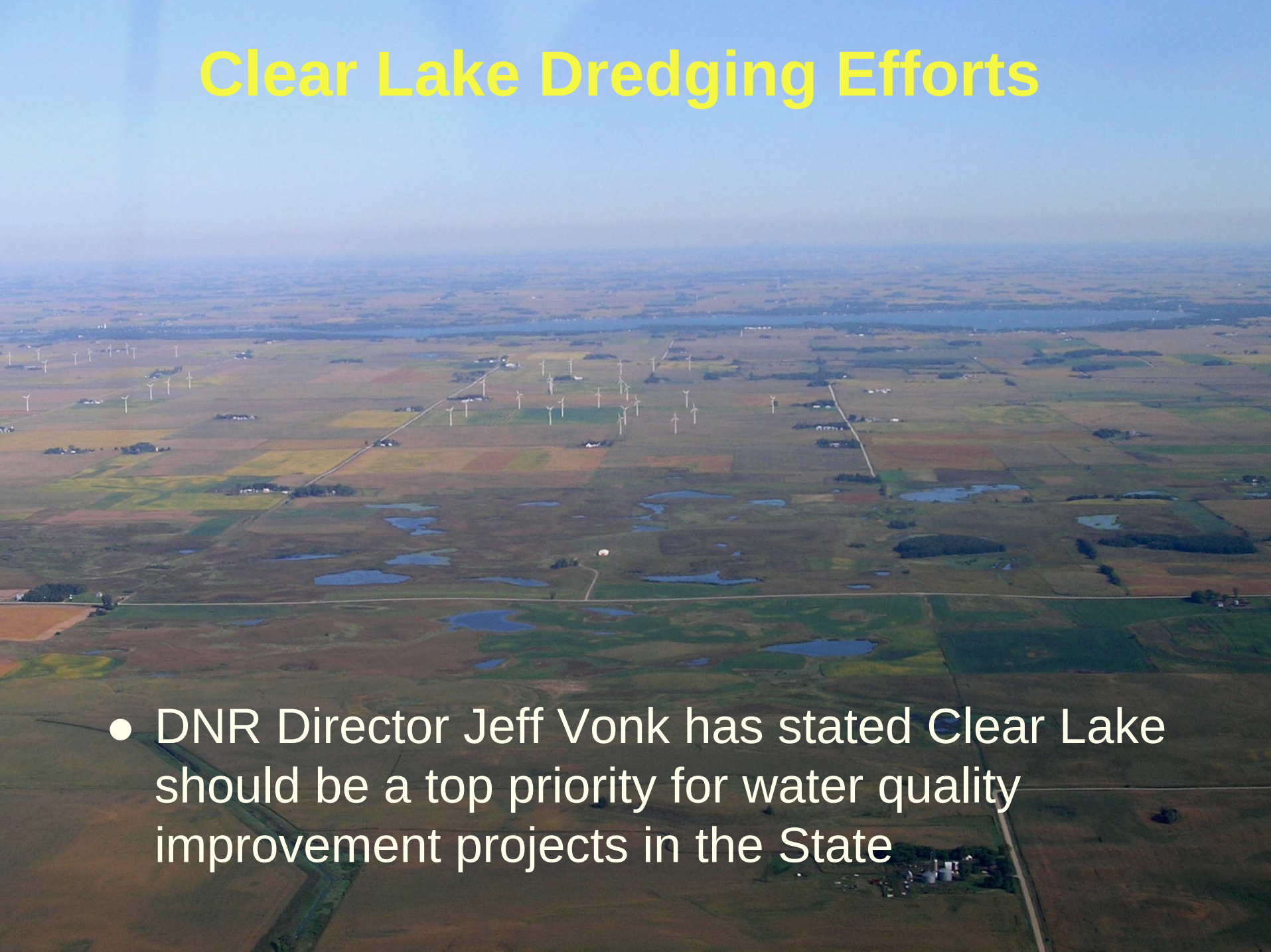
- Ventura Marsh has lost most of it's vegetation in the past 20 years
- IDNR partnering with Corps to install pumping system to reduce fish populations and restore vegetation
- Corps anticipates no non-federal funding will be needed to complete the $2 million project

Ventura Marsh Timeline

- Utilization of Corps of Engineers Funds
  - 2004: Initiation of Preliminary Restoration Plan
  - 2005: Completion of Preliminary Restoration Plan
  - 2006: Initiation and Completion of Feasibility/Plans and Specs phase
  - 2007: Begin Construction Phase
  - 2008: Finish Construction Phase


Ventura Marsh After Carp Removal

Clear Lake Dredging Efforts



- DNR Director Jeff Vonk has stated Clear Lake should be a top priority for water quality improvement projects in the State

Proposed Lake Dredging Funding

Proposed Dredging Funding Scenario:

- State of Iowa - $9 million
- Local Governments - $3 million
- Private Funding - $1 million

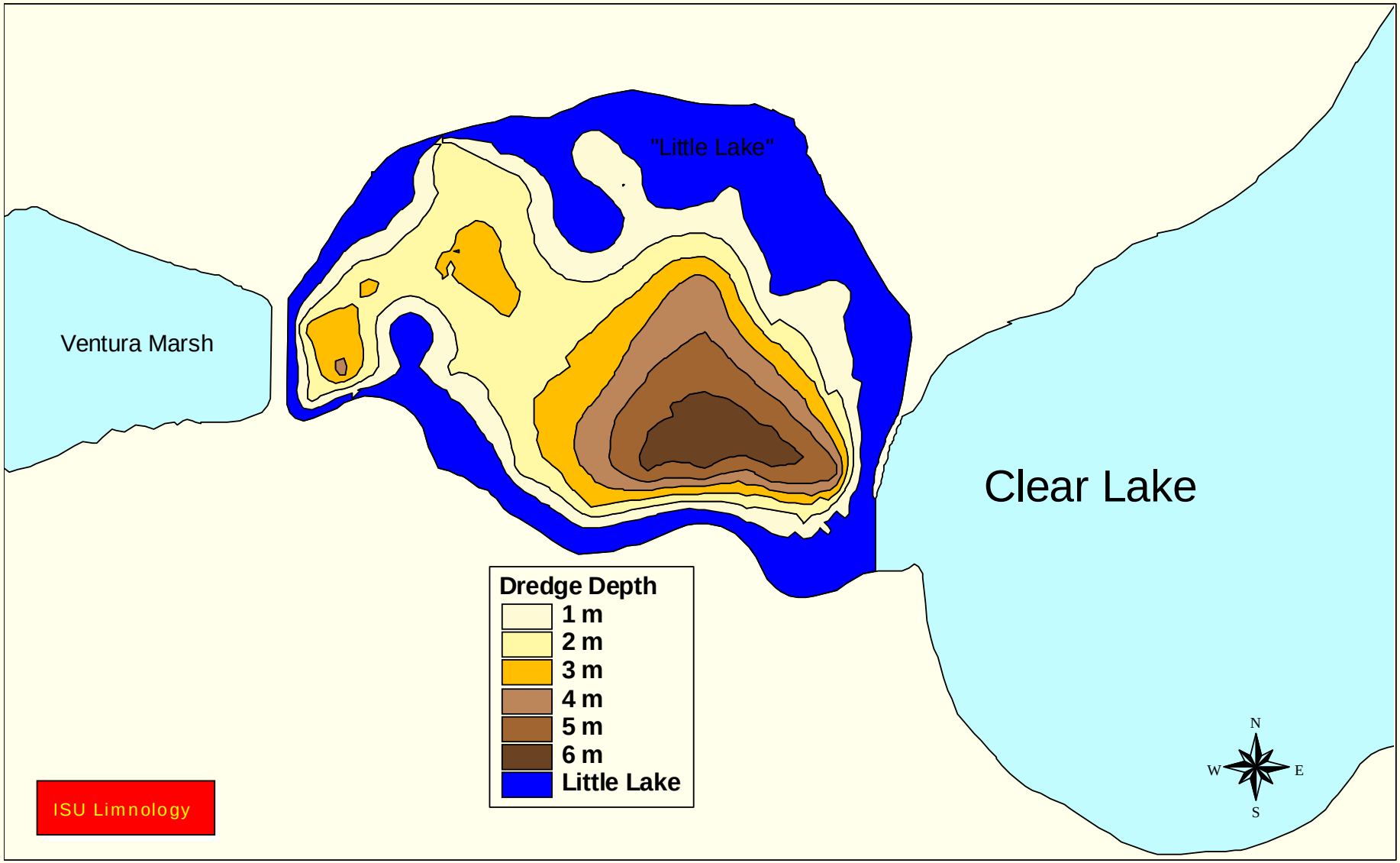
Proposed Lake Dredging Timeline

Proposed Timeline:

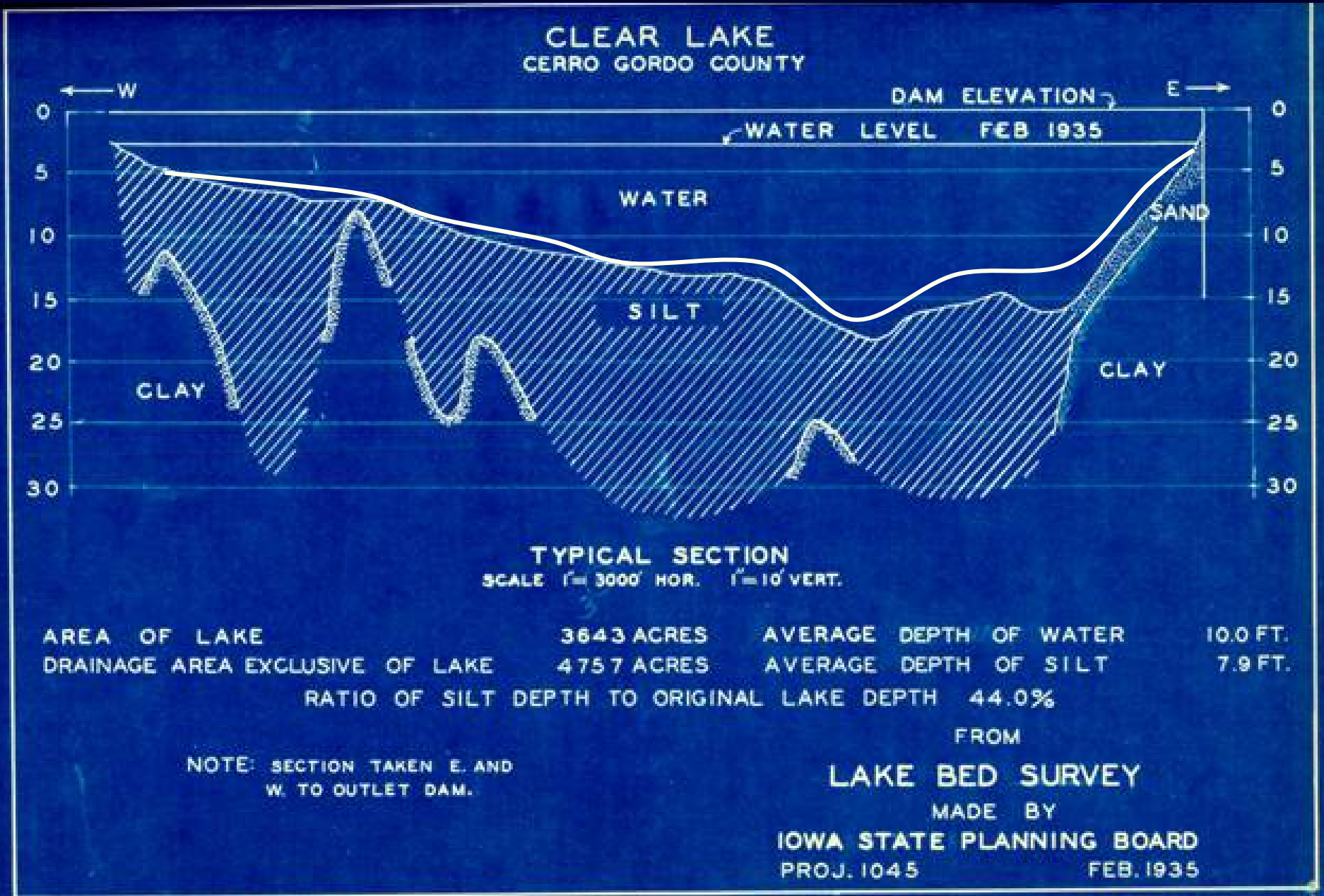
- 2006 – Engineering and Design
- 2007 – Secure and Construct Containment Site
- 2008 – Begin Dredging
- 2009 – Finish Dredging

ISU/DNR: Proposed Dredging For Clear Lake

- **Restore original depth of west end of Clear Lake**



Clear Lake Siltation



Expected Water Quality Improvements

- 64% of phosphorus in water entering dredged area would be removed
- Watershed improvements, Ventura Marsh restoration, and lake dredging should lead to significant water quality improvements
- **Dredging would provide a long-term solution to water quality impairments at Clear Lake**

Short-Term Investment With Long-Term Results

- Current economic value of Clear Lake: $60 million (ISU, 2001)
- Expected economic value with restoration: $90 million (ISU, 2001)
- $30 million annually in new revenue for State and local economy

Clear Lake Water Quality Project Sponsors/Partners

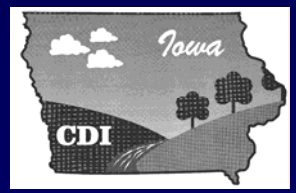
- US EPA
- Corps of Engineers
- Iowa DNR
- IDALS
- ISU
- Hancock and Cerro Gordo SWCD
- Association for the Preservation of Clear Lake
- NRCS
- CLTel
- Friends of Clear Lake

EPA United States Environmental Protection Agency

CLtel We Make It Easier!

DNR

Iowa Department of Agriculture and Land Stewardship



US Army Corps of Engineers ®

USDA Natural Resources Conservation Service

Thank You
For your continued support of our project!

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